

Conceptual Plan: Recommended Options Details

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3M PFC Settlement Work Group/Subgroup Meetings
October 20-21, 2020




- Health Index treatment thresholds
- Neighborhood/municipal connections

Health Index treatment thresholds

- Thresholds from $HI > 0$ to $HI > 1.0$ were considered in determining the recommended options (found in Appendix E.2 of CDWSP).
- $HI > 0.5$ and $HI > 0.3$ were where we saw additional wells to be treated while still providing a buffer to potential lower HRL/HBV PFAS values in the future
- Several municipal wells are provided treatment which do not have $HI > 0.5$ (or $HI > 0.3$ for Option 2) due to proximity to wells with Health Advisories (e.g., Woodbury and Cottage Grove well fields)
- For all options, **2,062** homes are being connected to municipal water (incl. West Lakeland). **61** additional non-municipal wells to receive POETS
- NOTE: MDH will still only issue well advisory at $HI = 1$ or greater (covered under consent order)

Health Index treatment thresholds

Municipal wells treated under each option

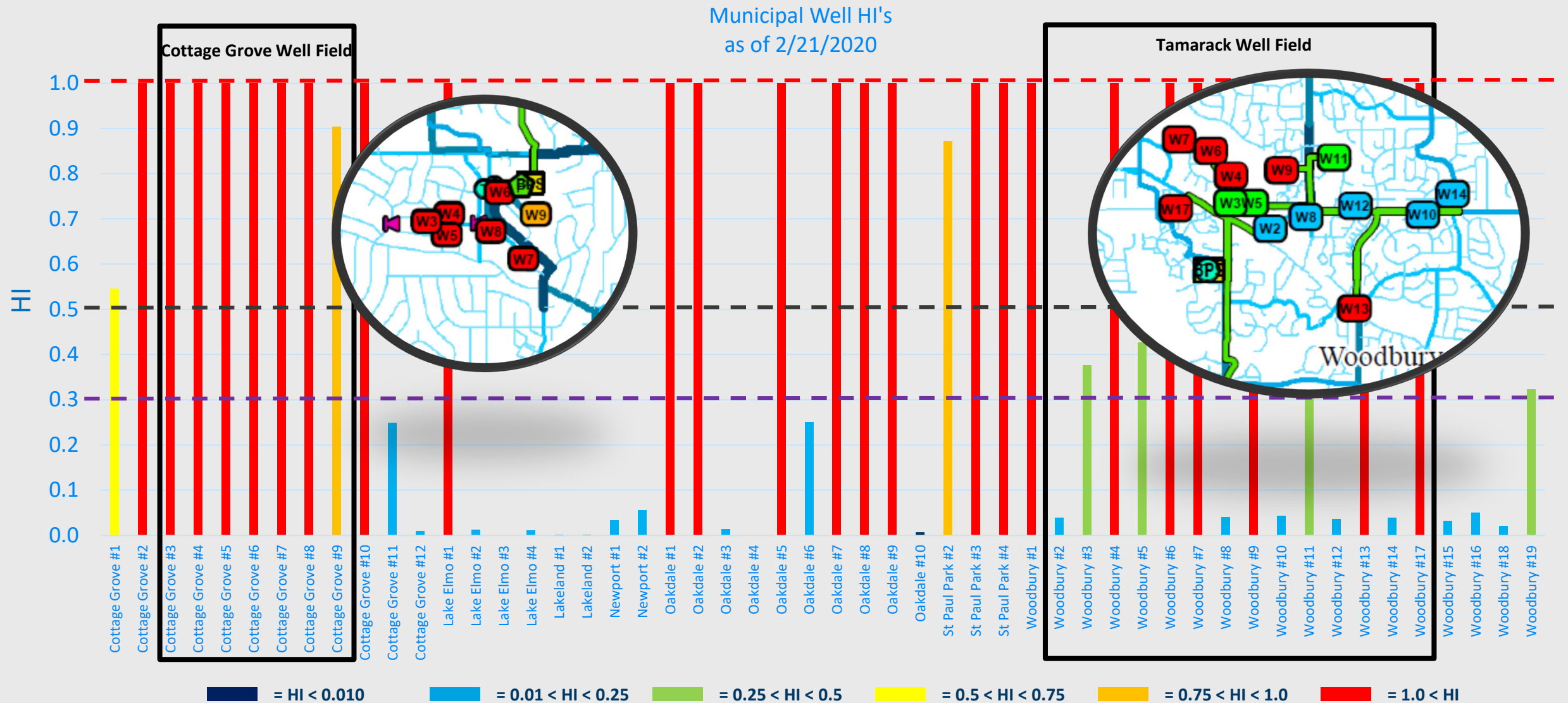
	Option 1 - preferred 	Option 2 	Option 3 
Cottage Grove	3, 4, 5, 6, 7, 8, 9, 10, & 1 new well (replacing wells 1 and 2)	3, 4, 5, 6, 7, 8, 9, 10, & 1 new well (replacing wells 1 and 2)	3, 4, 5, 6, 7, 8, 9, 10, & 1 new well (replacing wells 1 and 2)
Lake Elmo	None	None	None*
Lakeland	None	None	None
Newport	None	None	None
Oakdale	5, 9, & 2 new wells (replacing 1, 2, 7)	5, 9 (2 new wells replacing 1, 2, 7)	None*
St Paul Park	2, 3, 4	2, 3, 4	2, 3, 4
PIIC	1	1	1
West Lakeland	2 new wells	2 new wells	2 new wells
Woodbury	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 19 (+5 new wells)	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17
Total	33	40	29

- below HI=1 # - below HI threshold (0.5 or 0.3)

- included due to HI threshold in Option 2

*Oakdale and Lake Elmo receive water from SPRWS in Option 3, so none of their wells are treated in that option

Health Index treatment thresholds



Questions and discussion

Before we move on to neighborhood hookups, are there any additional comments or questions on the wells proposed to receive treatment based on treatment thresholds?

- Options for private well owners are limited
 - POETS
 - Settlement eligible costs: \$2,500 install treatment system and \$1,000 annual O&M
 - Municipal System Connection
 - Settlement eligible costs: \$2,500 cost to connection to home, cost per linear foot of water main, \$2,000 well sealing,
- Neighborhoods were evaluated independently

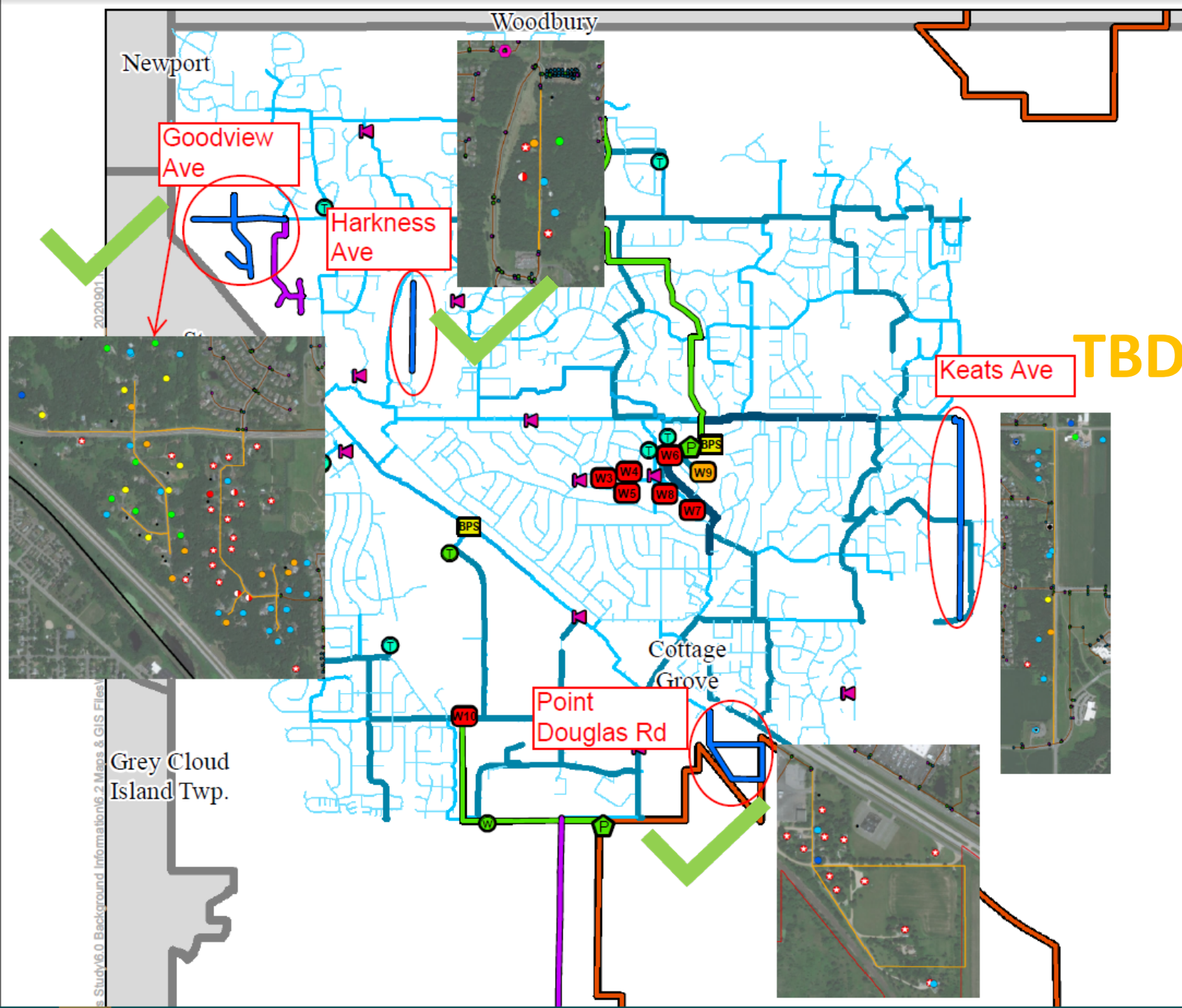
Neighborhood hookups

The MPCA and DNR recommend that neighborhoods be connected to public water systems if they

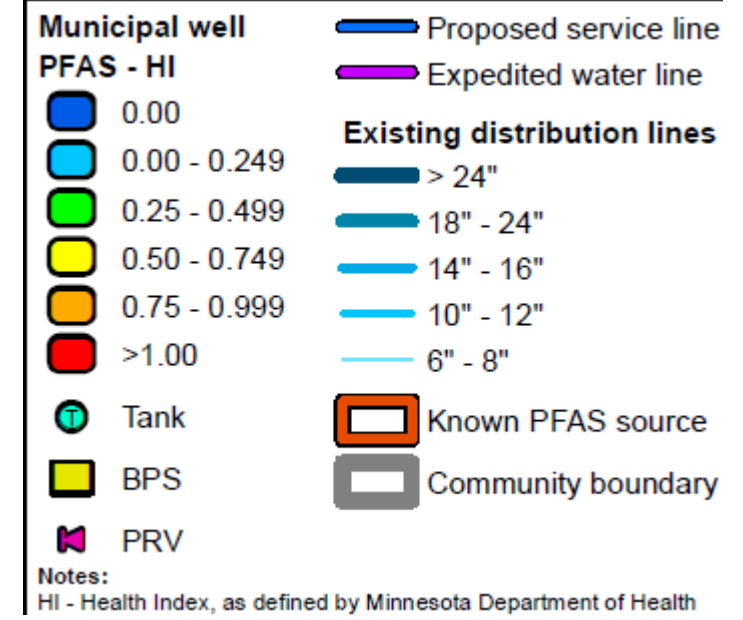
- 1. currently have a significant number of wells with elevated HI values, and**
- 2. if the costs of water mains and connections are less than the cost of POETS after a reasonable amount of time.**

Neighborhood Hookups

Example: Cottage Grove

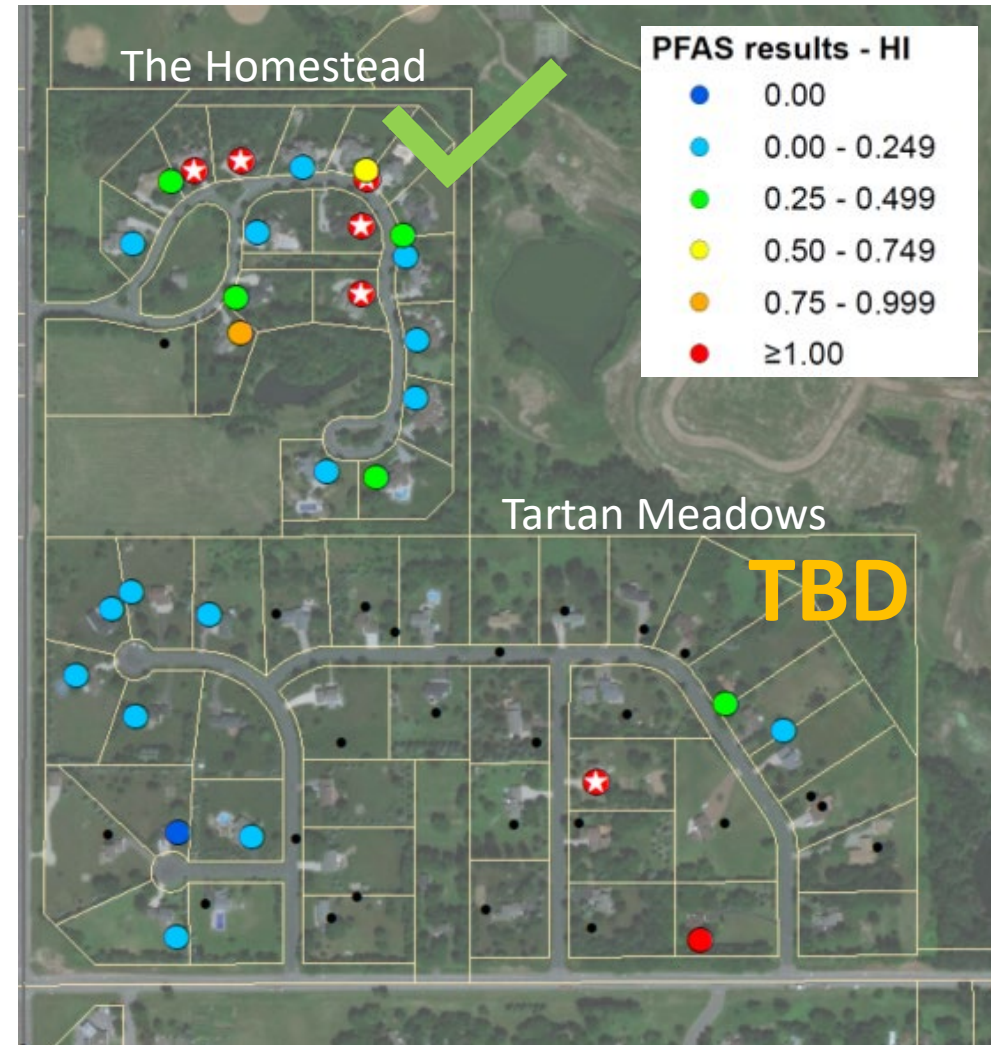


TBD



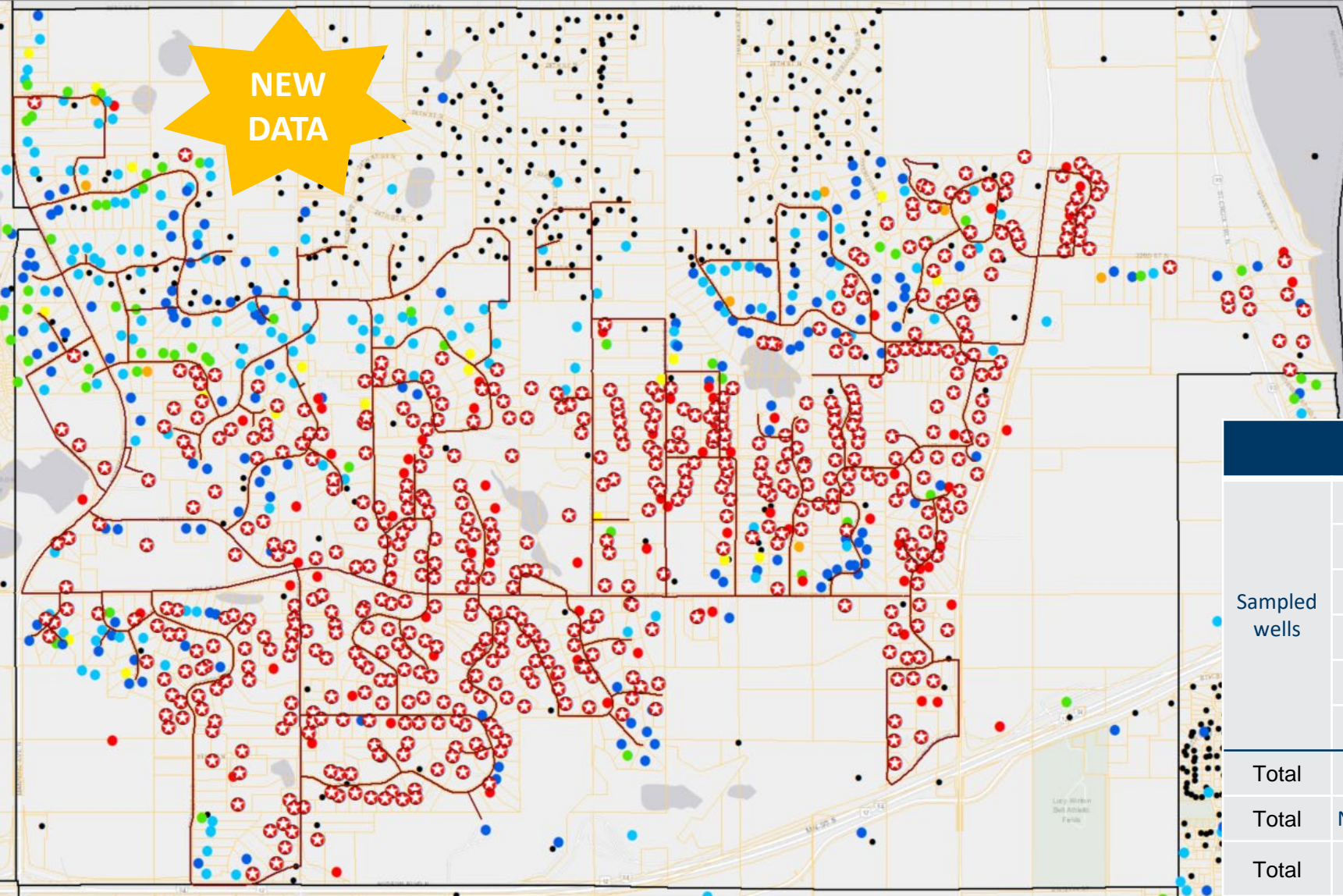
Potential future neighborhood hookups

- For many neighborhoods, we lack sufficient testing data to decide now whether they meet the criteria for hookup to public water system
- Wood estimated the cost (\$41 million) to hook up neighborhoods and that amount will be held aside to use for new hookups as new well testing and other data indicate that it is necessary
- Does not vary across the recommended options because neighborhood decisions were held constant



Example: West Lakeland

Neighborhood hookups



- PFAS results - HI**
- 0.00
 - 0.00 - 0.249
 - 0.25 - 0.499
 - 0.50 - 0.749
 - 0.75 - 0.999
 - ≥ 1.00
 - ≥ 1.00 - advisory sent
 - ★ GAC installed
 - TCE GAC POETS installed
 - Proposed Distribution Line

Status		No. of Wells	% of Sampled Wells	% of Wells w/PFAS
Sampled wells	Have GAC	544	55%	65%
	HI>1	78	8%	9%
	1>HI>0.5	28	3%	3%
	0.5>HI>0.3	42	4%	5%
	0.3>HI>0	150	15%	18%
	ND	155	16%	0%
Total	Sampled wells	997	100%	100%
Total	Not sampled/In MWI	398		
Total	All wells being Connected	1190		

Example: West Lakeland

Neighborhood hookups

Item	Quantity	Units	Description	Total Cost (GAC)
Capital Cost				
GAC POETs	813	POETs	Standard household systems, \$2,500 per well	\$2,033,000
Subtotal				\$2,033,000
Contingency (25%)				\$509,000
Professional services (15%)				\$305,000
Total Capital				\$2,847,000
Annual O&M Cost				
GAC POETs	1190	POETs	Standard household systems, \$1,000 per well	\$1,190,000
Subtotal				\$1,190,000

Item	Quantity	Units	Description	Total Cost (GAC)
Capital Cost				
GAC POETs	106	POETs	Standard household systems, \$2,500 per well	\$265,000
Subtotal				\$265,000
Contingency (25%)				\$67,000
Professional services (15%)				\$40,000
Total Capital				\$372,000
Annual O&M Cost				
GAC POETs	650	POETs	Standard household systems, \$1,000 per well	\$650,000
Subtotal				\$650,000



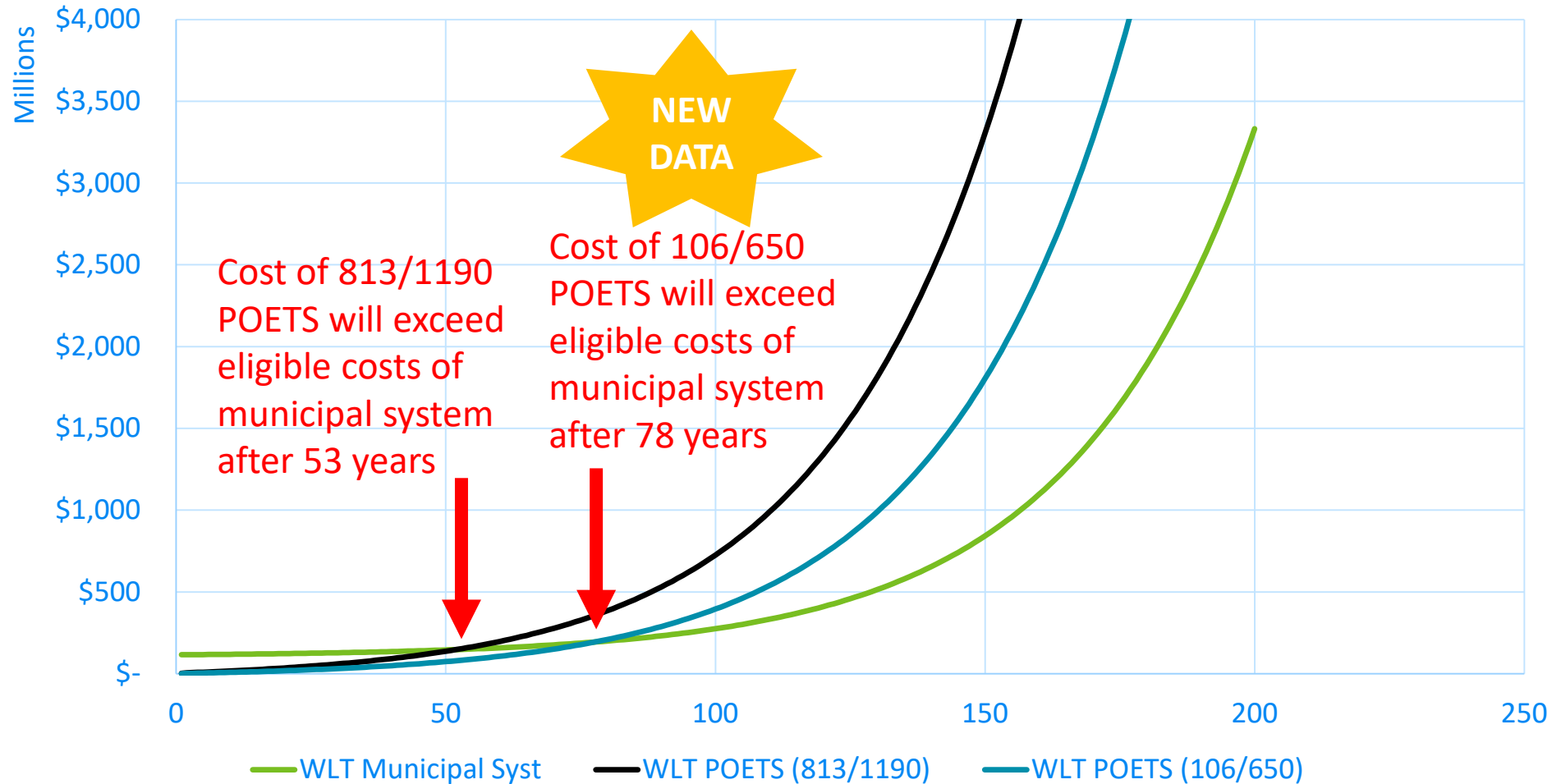
Item	Quantity	Units	Description	Total Cost (GAC)	Included?
Capital Cost					
PFAS Water Treatment Plants	1	WTPs	680 gpm	\$2,840,000	Yes
Pretreatment at WTP	1	Lump Sum	Iron/Manganese	\$360,000	Yes
New Well	2	Wells	each well 680 gpm	\$3,100,000	Yes
Well Modifications		Wells	Well & SCADA upgrades		No
Pressure Reducing Valves	3	Stations	6" PRVs	\$380,000	Yes
Storage tanks		Tank	0 MG (growth based)		No
Storage tanks	2	Tanks	0.5 MG total (0.25 MG each)	\$2,204,000	Yes
Booster Pump Station	3	Stations	3 BPS (300,100,10 gpm)	\$750,000	Yes
Water distribution mains	45.6	Miles	4"-8" distribution mains (PVC) for 1190 connections	\$62,520,000	Yes
Neighborhood mains		Miles	connect 324 homes		No
Well Sealing	1190	Ea	\$2,000 per well	\$2,380,000	Yes
Land acquisition (site + water mains)	58.7	Acres	1/2 acre per well, 1 acre at WTP, 20 ft easements (50%)	\$7,940,000	Yes
GAC POETs	0	POETs	Standard household systems, \$2,500 per well		No
Capital Cost Subtotal				\$82,480,000	
Contingency (25%)				\$20,620,000	
Professional services (15%)				\$12,380,000	
Total Capital				\$115,480,000	

Example: West Lakeland

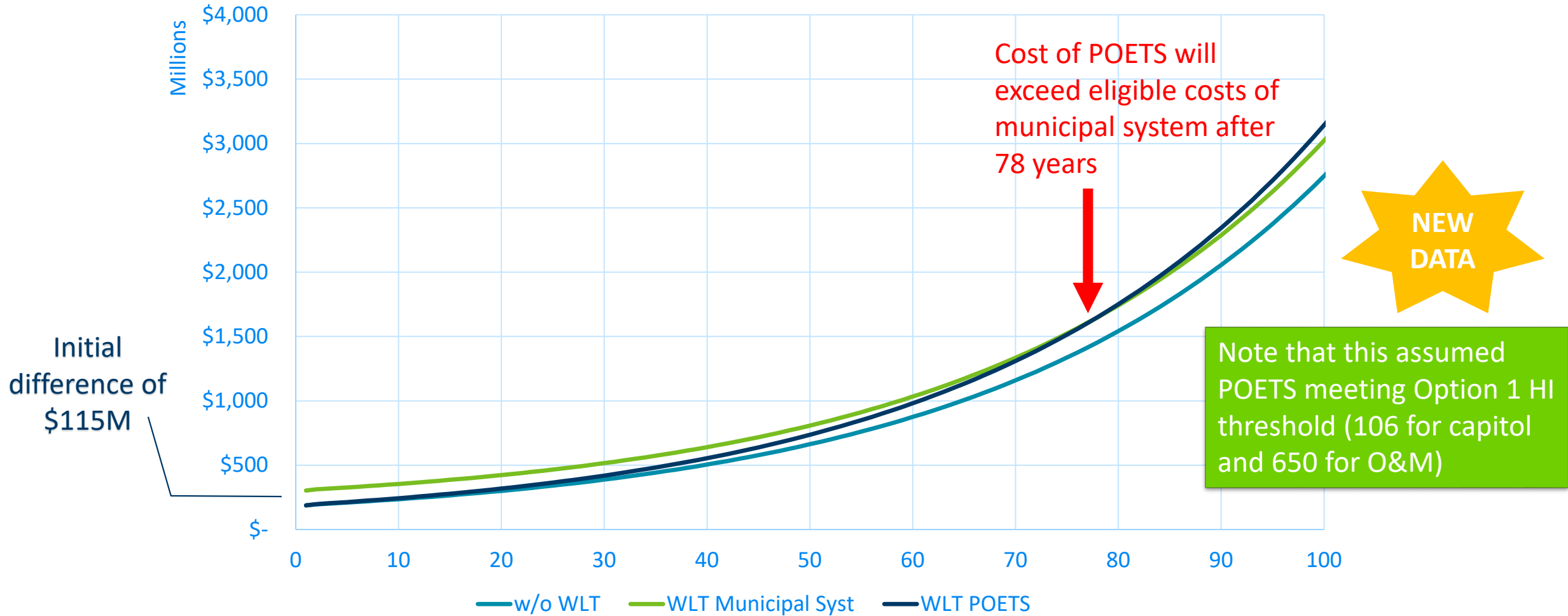
Neighborhood hookups

Item	Quantity	Units	Description	Total Cost (GAC)	Included?												
Annual O&M Cost																	
PFAS WTPs	1	WTP	Media Cost	\$12,000	Yes												
PFAS WTPs	1	WTP	Maint. and Operations	\$250,000	Yes												
Wells		Wells	each well 680 gpm		No												
Pressure Reducing Valves		Stations	Installed within right-of-way		No												
Storage Tanks		Tank	0 MG (growth based)		No												
Storage Tanks		Tanks	0.5 MG total (0.25 MG each)		No												
Booster Pump Station		Stations	3 BPS (300,100,10 gpm)		No												
Raw water transmission mains		Miles	0		No												
Water distribution mains		Miles	4"-8" distribution mains (PVC) for 1190 connections		No												
Neighborhood mains	0.00	Miles	connect 324 homes		No												
GAC POETs	0	POETs	Standard household systems, \$1,000 per well		No												
Annual O&M Subtotal				\$262,000													
<table border="1"> <tr> <td>maintenance</td> <td>EA</td> <td>5% WTP capital</td> <td>\$ 141,740</td> </tr> <tr> <td>operators</td> <td>EA</td> <td>1 FTE</td> <td>\$ 104,000</td> </tr> <tr> <td colspan="3">Total Annual O&M</td> <td>\$ 245,740</td> </tr> </table>						maintenance	EA	5% WTP capital	\$ 141,740	operators	EA	1 FTE	\$ 104,000	Total Annual O&M			\$ 245,740
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operators	EA	1 FTE	\$ 104,000														
Total Annual O&M			\$ 245,740														

Amortization of Option 1 costs - West Lakeland



Amortization of Option 1 costs - All communities



Poll question

Do you agree that the Co-Trustees considered the right mix of factors in determining which neighborhoods should be hooked up to public water systems under the recommended options?

Answer using the poll function on the right side of your screen





Questions?